AMENDMENTS TO THE SPECIFICATION

Please replace the paragraph beginning at **page 63, line 25**, and insert the following rewritten paragraph:

More specifically, the change ΔMr of a floor reaction force moment horizontal component per unit acceleration in the direction of each horizontal axis (X-axis, Y-axis) in the body inclination mode corresponds to the inertial moments of horizontal axis flywheels (FHx and ~~Fhy~~FHy).

Please replace the paragraph beginning at **page 92, line 18**, and insert the following rewritten paragraph:

If the coefficient of friction between the floor and the foot 22 is denoted by μ, and an effective radius of the surface of contact between the floor and the foot 22 to generate a moment vertical component (or a square root of a sectional secondary moment about a desired ZMP of the surface of contact between the floor and the foot 22) is denote by r, then Mzmin must be always set to be not less than -μ * r * floor reaction force vertical component, and Mzmax must be set to be not more than μ * r * floor reaction force vertical component. A simplest setting method is to set them according to the following expression, in which ka is a positive constant that is smaller than 1.

~~Mzxmin~~ Mzmin = -ka * μ * r * Floor reaction force vertical component
Mzmax = ka * μ * r * Floor reaction force vertical component

Please replace the paragraph beginning at **page 134, line 14**, and insert the following rewritten paragraph:

Then, the initial body posture angular velocities of Equations 37a and 37b and the heights of the trapezoids of ZMPrec (the trapezoidal patterns shown in Fig. 30) related to the integration of the second terms of the right sides of Equations 37a and 37b are taken as unknown numbers (However, the times of the break points of the trapezoidal patterns of ZMPrec are determined beforehand. Further, a trapezoidal height acyc1 of ZMPrec of a first turning gait and a trapezoidal height acyc2 of ZMPrec of a second turning gait are set to have the same value.) An initial body posture angular velocity determined by solving the simultaneous equation of Equations 37a and 37b including the unknown numbers is decided as a new initial body posture angular velocity. In this case, the terminal body posture angular velocity in Equation 37b is obtained by coordinate-converting the initial body posture angular velocity, which is an unknown number, into a value observed from a next time's gait supporting leg coordinate system by a matrix based on the above total turning angle of a normal gait.

Please replace the paragraph beginning at **page 155, line 1**, and insert the following rewritten paragraph:

Then, the initial total center-of-gravity vertical position/velocity of the normal

gait determined as described above are substituted into the terminal total center-of-gravity vertical positions/velocities of the following equations 41a and 41b, and the total center-of-gravity vertical position and velocity of the last time desired gait instantaneous value (to be more precise, the value obtained by converting the terminal state of the last time desired gait into the current time's gait supporting leg coordinate system) are substituted into the initial total center-of-gravity vertical positions and velocities of Equations 41a and 41b. Then, a floor reaction force vertical component pattern (to be more specific, a parameter value) of the current time gait is determined such that the relationship between Equations 41a and 41b is satisfied. The integrated values in Equations 41a and 41b are to be the integrated values in the period from the start to the end of the current time gait.

Please replace the paragraph beginning at **page 160, line 15**, and insert the following rewritten paragraph:

The explanation will now be given. In S800, various elements are initialized. Specifically, zero is substituted into time k for generating a provisional gait. Furthermore, the initial state of the current time gait is obtained by converting the terminal state of the last time desired gait (to be more specific, the terminal values of the gait states, including a horizontal body position/velocity, a vertical body position/velocity, a body posture angle and its angular velocity, a desired foot position/posture, and a desired arm posture) into a current time's gait supporting leg coordinate system.

Please replace the paragraph beginning at **page 204, line 2**, and insert the following rewritten paragraph:

Further alternatively, a function that combines the aforesaid relationship, which has been mapped or processed into an approximate expression, and the aforesaid function f may be mapped or processed into an approximate expression and stored. More specifically, from the normal gait parameters composed of the aforesaid foot trajectory parameters, the floor reaction force vertical component trajectory parameters, etc., the functions for directly determining the divergent components of normal gaits may be mapped or processed into approximate expressions and the results may be stored. For example, a normal gait may be generated in advance for each set of a plurality of types of typical normal gait parameters, the initial state of the normal gait for each set of normal gait parameters (to be determined in S024 of Fig. 13) may be determined beforehand, and a map that shows the relationship between the normal gait parameters of each set and the normal gait initial states may be prepared in advance. Then, when generating a desired gait, the initial state of a normal gait may be determined by selecting or interpolating from among the sets of the determined normal gait parameters on the basis of the aforesaid map. This arrangement obviates the need for generating a normal gait each time a current time gait is generated, thus permitting a significant reduction in the amount of calculation for the processing of generating a desired gait.